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## BIRD MIGRATION AT SOME OF THE BAHAMA LIGHTHOUSES.

BY J. LEWIS BONHOTE, M. A., F. Z. S. L., M. B. O. U.

THE birds dealt with in this paper from Cay Lobos were received in two consignments and cover the period of twelve months, from August, 1900, to May, 1901. Forty species are included, bringing the total number of species observed on the Cay to 54, which, when we consider that the Cay is but a bare rock of a few acres, standing well out at sea, is no inconsiderable number for observations extending over such a short period. It is to be regretted that Mr. Thompson has been removed to another station so that we are unlikely to receive further consignments from this locality; but Mr. Thompson has already sent a small collection from his new station, which is dealt with in this paper, and we may therefore hope to receive many further records from him.

Of the birds procured one of the most noticeable is *Aramus giganteus*, but from the direction of their flight, and the time of year (28th Jan.) it is probable that they were merely moving along the coast of Cuba, and not on any direct migration. *Porphyrio martinica* occurs as a solitary wanderer, most probably, considering the lateness of the hour (4 A. M.), from some northern region. *Helmintherus swainsoni*, *Dendræca cærulea*, *Sylvania mitrata*, *Pyranga rubra*, and *Empidonax acadicus* are recorded for the first time within the limits of the Bahamas.

Looking at the collection from a Cuban point of view we may notice the occurrence of *Dendræca evelynæ*, which has not yet, as far as we are aware, been observed in Cuba, but which, from the occurrence of this specimen, probably occasionally straggles there.

As regards the nights on which large movements were observed, the 20th Oct. and the 22nd Nov. were those on which most species were procured on the fall migration, and in both cases the wind was northeast. October seems to be the chief migratory month, as specimens were got on every night that the elements proved favourable.

On the spring migration the nights of the 15th and 21st March,

the 15th April and the 13th May were the richest in variety of species, and on three of these occasions the wind was southeast. On the 15th April, however, the night in which 17 different species were procured, the wind was north-northwest. Although we think it is well to draw attention to these facts, too much stress should not be laid on the direction of the wind, as the number of birds striking is probably far more dependent upon the state of the atmosphere (*i. e.*, rainy, misty, cloudy, etc.) than on the actual direction of the wind. In the cases under consideration it will be noticed that, with the exception of the 13th May, Mr. Thompson records rain or mist in every instance; it may be well also to notice that the birds invariably come up to the light against the wind and strike on the lee side of the antern.

As regards species which were observed but of which no specimens were sent, we notice Swallows on the 20th and 31st August; Kingfisher (*Ceryle alcyon*) 21st August and 1st Sept.; Rice Birds (*Dolichonyx*) 1st and 8th Sept., and Mr. Thompson estimates that on the last mentioned date the flock consisted of at least 200 individuals. A Barn Owl also was seen on the 1st September. Flocks of small birds visited the island on the 4th and 9th Sept., 28th Oct. and 27th November.

On the 20th April a large migration took place, the greater bulk of which were small Passeres, but it also included Fighters (*Tyrannus*) and Rice Birds (*Dolichonyx*). The last spring movement recorded is on May 10, when a small flock of Passeres rested on the Cay.

There remains only for me to give my best thanks to Messrs. Thompson and Solomon for all the trouble they have taken and to hope that they may send us many more equally interesting consignments.

#### CAY LOBOS LIGHT.

#### **Turdus mustelinus.**

No. 8. *a.* 15th April, 1901.

#### **Turdus fuscescens.**

No. 15. *a.* 15th April, 1901.

#### **Mniotilla varia.**

No. 2. *a, b.* 29th Oct., 1900.

No. 4. *c-f.* 21st March, 1901.

No. 5. *g-k.* 23rd March, 1901.No. 3. *i.* 3rd April, 1901.Nos. 8 and 15. *h-m.* 15th April, 1901.**Parula americana.**No. 2. *a-e.* 20th Oct., 1900.No. 6. *f.* 29th Oct., 1900.No. 9. *g, h.* 22nd Nov., 1900.No. 4. *i-l.* 21st March, 1901.No. 5. *m-o.* One male, two females, 23rd March, 1901.No. 6. *p.* One female, 25th March, 1901.No. 4. *q.* 11th April, 1901.No. 6. *r.* One male, 15th April, 1901.No. 11. *s-u.* Two males, one female, 13th May, 1901.No. 12. *v.* One female, 14th May, 1901.**Helmintherus swainsoni.**No. 5. *a, b.* 23rd March, 1901. No. 6. *c.* 26th March, 1901.

This is the first record of this species within the Bahama area.

**Dendrœca coronata.**No. 9. *a.* 22nd Nov., 1900. Struck at midnight.No. 2. *b.* 14th Feb., 1901. No. 5. *d, e.* 23rd, March, 1901.No. 4. *c.* 21st March, 1901.**Dendrœca palmarum.**No. 6. *a.* 29th Oct., 1900.No. 5. *g.* 23rd March, 1901.No. 7. *b-d.* 30th Oct., 1900.No. 8. *h.* 15th April, 1901.No. 9. *e.* 22nd Nov., 1900.**Dendrœca cærulea.**No. 6. *a, b.* 26th April, 1901. Hitherto only recorded from Cuba and Grand Cayman in the West Indies.**Dendrœca discolor.**No. 5. *a-c.* Males, 23rd March, 1901.No. 8. *d-g.* Four males, 15th April, 1901.No. 11. *h.* One male, 13th May, 1901.**Dendrœca tigrina.**No. 2. *a.* One male, 20th Oct., 1900.No. 9. *b.* 22nd Nov., 1900.No. 2. *c-e.* Three females, 14th Feb., 1901.No. 8. *f, g.* One male, one female, 15th April, 1901.No. 5. *h.* One male, 21st April, 1901.

**Dendroeca cærulescens.**

No. 2. *a.* One male, 20th Oct., 1900.  
 No. 5. *b.* One male picked up on the cay, 28th Oct., 1900.  
 No. 5. *c-e.* One male, two females, 23rd March, 1901.  
 No. 7. *f.* One male, 14th April, 1901.  
 No. 8. *g, h.* Males, 15 April, 1901.  
 No. 9. *i.* Male, 19th April, 1901.  
 No. 12. *k.* Female, 14th May, 1901.

**Dendroeca dominica.**

No. 4. *a-d.* 21st March, 1901. No. 5. *e-g.* 23rd March, 1901.

**Dendroeca striata.**

No. 2. *a.* Female, 20th Oct., 1900.  
 No. 15. *b, c.* Males, 15th April, 1901.  
 No. 10. *d-f.* 10th May, 1901.  
 No. 11. *g, h.* One male, one female, 13 May, 1901.

**Seiurus aurocapillus.**

No. 9. *a.* 22nd Nov., 1900. No. 11. *e.* 13th May, 1901.  
 No. 15. *b-d.* 15th April, 1901.

**Seiurus motacilla.**

No. 6. *a.* 26th March, 1901. Struck the Light at 3 A. M.

**Seiurus noveboracensis.**

No. 7. *a.* 30th Oct., 1900. No. 5. *b.* 11th April, 1901.

**Opornis agilis.**

No. 10. *a.* 9th May, 1901. Struck at 7.30 A. M. There are only two previous records of this species in the Bahamas; the first from Cay Sal, where Mr. Winch met with it on migration about the 14th May, 1891 (Auk, Vol. VIII, p. 352), and the second obtained by myself at Nassau during the autumn migration on the 12th Oct., 1898.

**Geothlypis trichas.**

No. 2. *a.* One male, 29th Oct., 1900. Struck at midnight.  
 No. 6. *b.* Male, 29th Oct., 1900.

**Sylvania mitrata.**

No. 6. a. 15th April, 1901.

**Setophaga ruticilla.**

No. 2. a-c. One male, two females, 20th Oct., 1900.

No. 7. d. Male, 14th April, 1901.

No. 11. e. 13th May, 1901. Struck at 2 A. M.

**Vireo flavifrons.**

No. 5. a. 23rd March, 1901. Struck at 11.20 P. M. This species is said by Cory (Cat. B. W. Indies, p. 116, 1892) to have occurred on New Providence but I have not been able to find a copy of the reference. (A. H. Jennings, John Hopkins Univ. Cir., Vol. VII, p. 39). I have, however, recently obtained a single specimen myself on Andros.

**Vireo crassirostris.**

No. 5. a. 23rd March, 1901.

**Pyranga rubra (Linn.).**

No. 8. a. Female, 15th April, 1901. A certain amount of confusion seems to exist with regard to the synonymy of this species, and a mistake occurred in my previous paper on the birds of New Providence (Ibis, 1899, p. 518). In that paper a bird is recorded in the introduction as *P. aestiva* and occurs in the text as *P. rubra*. That specimen is the *P. aestiva* (Gmel.) of the 'British Museum Catalogue,' which is the same as the *P. rubra* of Cory, 'Birds of the West Indies,' p. 85 and 'Cat. W. Ind. Birds,' p. 114. The specimen under consideration, however, is the *P. rubra* (Linn.) of the B. M. Cat., recorded by Cory as *P. erythromelas* (Vieill.) in his 'Birds of the West Indies,' p. 86. This is therefore the first record of this species within the Bahama area.

**Cyanospiza cyanea.**

No. 8. a. 15th April, 1901.

**Tyrannus griseus.**

No. 9. a. 24th April, 1901. Six specimens of 'Fighters,' presumably of this species, inhabited the Cay for three days, March 24th-26th.

**Empidonax acadicus** [= *virescens*].

No. 8. *a.* 15th April, 1901. The first record from the Bahamas.

**Dorichia evelynæ.**

No. 8. *a.* 15th April, 1901. The occurrence of this bird so near the Cuban coast points to its occasional occurrence on that island.

**Spyrapicus varius.**

No. 4. *a.* 21st March, 1901. This specimen must have been a very bright male; the white tips and the outermost spots of the primaries are tinged with pinkish and the white margins of the outer tail-feathers are of a dull pinkish brown.

**Columba leucocephala.**

No. 10. *a.* 21st Dec., 1900. Struck the tower at 12.20 A. M.

**Charadrius fulvus.**

No. 4. *a.* 25th Oct., 1900.

**Strepsilas interpres.**

No. 8. *a.* 14th Nov., 1900. Shot on the Cay.

**Tringoides macularius.**

No. 10. *a.* 25th April, 1901.

**Ardea virescens.**

No. 2. *a, b.* 20th Feb., 1901.

No. 8. *c.* 22nd April, 1901. "About 30 arrived on the night of the 20th and all left the following day with the exception of one, which was shot on the 22nd." — T. R. T.

I have compared these specimens with the individual I obtained at Nassau in 1898 and I find that that specimen should be referred to *A. bahamensis* of Brewster and not to this species as erroneously recorded (*Ibis*, 1899, p. 519).

**Nyctiardea violacea.**

~~No.~~ No. 3. *a.* 23rd Oct., 1900. Immature.

No. 4. *b.* 21st March, 1901. A fine adult.

**Aramus giganteus.**

No. 1. *a-c.* 28th Jan., 1901. Nine examples were seen in all; they came from the N. W. and left going S. E. This is the first record within the Bahama area.

**Porphyrio martinica.**

No. 1. *a.* 19th Oct., 1900. Struck at 4 A. M.

**Porzana carolina.**

No. 1. *a.* 19th Oct., 1900.

**Sterna cantiaca [acutifrons]. BLACKSHANK.**

No. 12. *a-c.* 17th Jan., 1901.

No. 1. *d.* 23rd Jan., 1901. This species and *S. dougalli* sleep on the Cay whenever a strong breeze is blowing.

**Sterna dougalli. REDSHANK.**

No. 11. *a-c.* 26th Dec., 1900. Shot on the Cay.

No. 12. *d.* 14th May, 1901. Struck at 1.15 A. M.

**Sterna antillarum.**

Mr. Thompson has sent me some eggs of this species laid on the Cay.

**Sterna fuliginosa.**

No. 5. *a.* 23rd March, 1901. I also received eggs of this species from a Cay about thirty miles from the station.

Extracts from Schedules.

Date	Name of Bird	Weather	Wind	Side of light struck
19 Oct., 1900.	<i>P. martinica</i> , <i>P. carolina</i>	Fog & rain	S. W. 1	
20 " "	<i>M. varia</i> , <i>P. americana</i> , <i>D. tigrina</i> , <i>D. cærulea</i> , <i>D. cæruleascens</i> , <i>D. striata</i> , <i>G. trichas</i> , <i>S. ruticilla</i>	Rainy	N. N. E. 2	—
23 " "	<i>N. violacea</i>	Clear	E. 6	—
25 " "	<i>C. fulvus</i>	Rainy	N. E. 6	—
28 " "	<i>D. cæruleascens</i>	"	"	—
29 " "	<i>P. americana</i> , <i>D. palmarum</i> , <i>G. trichas</i>	"	"	—
30 " "	<i>D. palmarum</i> , <i>S. noveboracensis</i>	—	—	—
14 Nov., "	<i>S. interpres</i>	Misty	N. E. 5	S.
22 " "	<i>P. americana</i> , <i>D. coronata</i> , <i>D. palmarum</i> , <i>D. tigrina</i> , <i>S. aurocapillus</i>	Misty	N. E.	S.
21 Dec., "	<i>C. leucocephala</i>	Rain & fog	S. W. 3	S.
28 Jan., 1901.	<i>A. giganteus</i>	—	N. W. 4	—
14 Feb., "	<i>D. coronata</i> , <i>D. tigrina</i>	Rain & mist	S. W. 1	N. W.
20 " "	<i>A. virescens</i>	—	N. W. 4	—
21 Mar., "	<i>M. varia</i> , <i>P. americana</i> , <i>D. coronata</i> , <i>D. dominica</i> , <i>S. varius</i> , <i>N. violacea</i>	Rain	S. E. 4	N. W.
23 " "	<i>M. varia</i> , <i>P. americana</i> , <i>H. swainsoni</i> , <i>D. coronata</i> , <i>D. palmarum</i> , <i>D. discolor</i> , <i>D. cæruleascens</i> , <i>D. dominica</i> , <i>V. flavigrons</i> , <i>V. crassirostris</i> , <i>S. fuliginosa</i>	Foggy	S. E. 2	S. & W.
25 " "	<i>P. americana</i> , <i>H. swainsoni</i> , <i>S. motacilla</i>	—	S. E. 2	S. W.
3 Apr., "	<i>M. varia</i>	—	N. W. 3	—
11 " "	<i>P. americana</i>	—	N. W. 3	—
14 " "	<i>D. cæruleascens</i> , <i>S. ruticilla</i>	—	S. 3	—
15 " "	<i>T. mustelinus</i> , <i>T. fusciceps</i> , <i>M. varia</i> , <i>P. americana</i> , <i>D. palmarum</i> , <i>D. cærulea</i> , <i>D. striata</i> , <i>D. discolor</i> , <i>D. tigrina</i> , <i>D. cæruleascens</i> , <i>S. aurocapillus</i> , <i>S. noveboracensis</i> , <i>S. mitrata</i> , <i>P. rubra</i> , <i>C. cyanea</i> , <i>E. acadicus</i> , <i>D. evelynæ</i>	Misty	N. N. W. 3	S. E.
19 " "	<i>D. cæruleascens</i>	Misty	S. E. 5	N. W.
21 " "	<i>D. tigrina</i>	—	N. N. W. 4	—
23 " "	<i>A. virescens</i>	—	—	—
24 " "	<i>T. griseus</i>	—	—	—
9 May, "	<i>D. striata</i> , <i>O. agilis</i> .	Cloudy	S. E. 1	—
13 " "	<i>P. americana</i> , <i>D. discolor</i> , <i>D. striata</i> , <i>S. aurocapillus</i> , <i>S. ruticilla</i> .	Clear	S. E. 1	—
14 " "	<i>P. americana</i> , <i>D. cæruleascens</i> .	—	—	—

## THE BIRD ROCK CONSIGNMENT.

Mr. Thompson having been transferred to the above light last autumn I have much pleasure in tabulating below the results of the first consignment from his new station.

Bird Rock Light, situated in Lat.  $22^{\circ} 50'$  N., Long.  $74^{\circ} 15'$  W., marks the northeastern limit of the Crooked Island Passage and is on a small cay lying just off Crooked Island. It is, of course, too early to speak definitely as yet, but, as might be expected, it does not appear to lie on any great migration route, and the few specimens captured during the fall of last year are solitary stragglers, with the exception of a flock of *Coccyzus americanus* which struck the light in some numbers on the night of the 15th October.

***Margarops fuscatus.***

No. 5. 14th Nov., 1901. One specimen struck at 9.50 P. M.

***Dendroeca striata.***

No. 4. Several specimens, adults and young, 16th Oct.

***Vireo calidris.***

No. 1. 14th Sept. Struck at 5.15 P. M.

***Coccyzus americanus.***

No. 3. 12 specimens, 15th Oct.

***Zenaidura macrura.***

No. 2. 29th Nov. Shot on the cay.

***Chamæelia passerina.***

No. 1. One specimen, 18th Sept.

***Porzana carolina.***

No. 3. One specimen, 15th Oct., 1901.

Date	Name of Bird	Weather	Wind	Side of light struck
8 Sept., 1901.	<i>C. passerina</i>	Misty	S. W. 2	N. E.
14 " "	<i>V. calidris</i>	"	S. E. 3	—
15 Oct., "	<i>C. americanus, P. carolina</i>	Rain & mist	S. 5	N.
16 " "	<i>D. striata</i>	Misty	W. 5	E.
14 Nov., "	<i>M. fuscatus</i>	Clear	N. E. 2	N. W.
29 " "	<i>Z. macrura</i>	Mist & rain	N. by E. 5	—

## THE CAY SAL CONSIGNMENTS.

From the Cay Sal Light I have received, through the kindness of Mr. J. S. Solomon, two small consignments, the one covering the spring migration of 1901 and the other the autumn and winter movements of 1901-02.

The lighthouse of Cay Sal is situated on the westernmost point of the Cay Sal Bank in Lat.  $23^{\circ} 55'$  N., Long.  $80^{\circ} 25'$  W., and lies nearly midway between Florida and the north coast of Cuba. During the year covered by the schedules no great movements appear to have been observed, most of the birds arriving singly or in twos and threes; the greatest rush recorded took place on the 13th of March and was made up of four or five small species of Passeres, which commenced striking about 2 A. M. and continued until dawn. Many of these birds remained on the cay three days before continuing their journey.

The only other large movement took place, curiously enough, on the 15th December, a time when, as a rule, but little migration is to be looked for; as in the previous rush the species represented were much the same; they commenced to strike at 10 P. M. but ceased about 5 A. M. and very few were seen on the cay the next day.

The other point of note is the occurrence on two occasions of the Purple Gallinule (*P. martinica*) which is probably therefore a regular migrant to the Bank.

***Mniotilta varia.***

No. 1. *a, b.* 13th March, 1901.

***Parula americana.***

No. 1. *a-h.* Six males, two females, 13th March, 1901.

***Helminthophila bachmani.***

No. 1. *a.* 13th March, 1901.

***Dendroeca coronata.***

No. 1. *a.* 13th March, 1901.

No. 1. *b-i.* 15th Dec., 1901.

***Dendroeca palmarum.***

No. 1. *a-f.* 13th March, 1901.

No. 1. *g, h.* 15th Dec., 1901.

***Geothlypis trichas.***

No. 1. *a-f.* Four males, two females, 13th March, 1901.

No. 1. *g.* One female, 15th Dec., 1901.

***Ammodramus savannarum.***

No. 1. *a-h.* 15th Dec., 1901.

**Dolichonyx oryzivorus.**No. 3. *a-c.* Three males in full plumage, 28th March, 1901.**Coccyzus americanus. RAIN CROW.**No. 2. *a.* 17th March, 1901. This is the same species as that previously recorded (Auk, 1901, p. 148) as *C. minor* from Cay Lobos but not the same as *C. minor maynardi* from Nassau.**Porphyrio martinica.**No. 5. *a.* 24th April, 1901.No. 2. *b.* 9th Feb., 1902. Struck the lantern at 11.30 P. M.**Sterna fuliginosa. EGG BIRD.**No. 4. *a.* 18th April, 1901. "These birds breed on the Cay every year, when they gather by thousands from May to August."—J. S. S.*Extracts from Schedules.*

Date	Name of Bird	Weather	Wind	Side of light struck
13 Mar., 1901.	<i>M. varia, P. americana, H. bachmani, D. coronata, D. palmarum, G. trichas</i>	Cloudy	E. S. E. 5	N. & N. E.
17 " "	<i>C. americanus</i>	Cloudy	N. E. 5	—
28 " "	<i>D. oryzivorus</i>	Cloudy	S. 5	—
18 Apr., "	<i>S. fuliginosa</i>	Cloudy	E. S. E. 6	—
24 " "	<i>P. martinica</i>	Cloudy	N. W. 4	—
15 Dec., "	<i>D. coronata, D. palmarum, G. trichas, A. savannarum</i>	Cloudy	N. N. W. 5	S. E.
9 Feb., 1902.	<i>P. martinica</i>	Cloudy & squally	N. E. 6	S.